

What is claimed is:

1. A lithographic printing member comprising:

5 a base layer;

10 a laser-absorbing layer over said base layer, where said laser-absorbing layer is a gradient solid dispersion of metal and metal-oxide areas such that concentration ratios between the metal and the metal-oxide vary throughout a thickness of said laser-absorbing layer; and

15 a coating layer over said laser-absorbing layer, said coating layer and said base layer having different affinities for ink.

2. The printing member of claim 1, wherein the metal is aluminum and the 15 metal-oxide is aluminum-oxide.

3. The printing member of claim 1, wherein at least some of the metal-oxide 20 areas have a non-stoichiometric ratio between the metal of the metal-oxide and the oxygen such that there are more metal atoms than the stoichiometric ratio.

4. The printing member of claim 3, wherein the non-stoichiometric ratio 25 varies throughout the thickness of said laser-absorbing layer.

5. The printing member of claim 4, wherein the non-stoichiometric ratio is 30 higher in proximity to said base layer than in proximity to said coating layer.

6. The printing member of claim 1, wherein the thickness of said laser-absorbing layer is in the range between 0.02 to 0.6 microns.

7. The printing member of claim 1, wherein the concentration of the metal in proximity to said base layer is higher than the concentration of the metal in proximity to said coating layer.
- 5 8. The printing member of claim 1, wherein said coating layer is an ink-repelling layer.
9. The printing member of claim 1, wherein said coating layer comprises an ultraviolet curable material.
- 10 10. The printing member of claim 1 further comprising:  
a form film over said coating layer.
- 15 11. The printing member of claim 10, wherein said form film is a polymeric film with low surface energy.
12. The printing member of claim 1 further comprising:  
a primer layer over said laser-absorbing layer.
- 20 13. An on-demand plate-making apparatus comprising:  
a substrate holder to hold a substrate, said substrate comprising a base layer and a laser-absorbing layer;  
a dispensing unit to prepare a coating material; and  
25 a coating unit to apply said coating material onto said substrate to form a coating layer,  
wherein said coating layer and said base layer have different affinities for ink.
14. The apparatus of claim 13, wherein said substrate holder is a substrate-feed roller.
- 30 15. The apparatus of claim 13, wherein the dispensing unit is a multi-compartment cartridge.

16. The apparatus of claim 13, wherein the coating unit comprises a form film holder and a guide roller to guide the form film such that the coating material is trapped between the substrate and the form film.
- 5 17. The apparatus of claim 13, further comprising:  
an ultraviolet lamp.
18. The apparatus of claim 13, further comprising:  
a cutting unit to cut the substrate in two dimensions.
19. The apparatus of claim 13, wherein said laser-absorbing layer is a gradient solid dispersion of metal and metal-oxide areas such that concentration ratios between the metal and the metal-oxide vary throughout a thickness of said laser-absorbing layer
- 10 20. A method comprising:  
guiding a form film and a substrate where said substrate comprising a base layer and a laser-absorbing layer to an area of convergence;  
15 supplying a liquid-based coating material to said area of convergence;  
and  
laminating said form film, said liquid-based coating material, and said substrate to form a coating layer over said substrate,
- 20 21. The method of claim 20, wherein said coating layer and said base layer have different affinities for ink.
- 25 22. The method of claim 20 further comprising:  
radiating said coating layer with ultraviolet radiation.
23. The method of claim 20 further comprising:  
preparing on demand for a single use said liquid-based material.